

Unproven breast imaging technologies – the facts

Unproven breast imaging technologies are aggressively marketed in Western Australia, particularly to young women. They are often promoted as an alternative to mammography, the screening tool for breast cancer.

This factsheet provides information about the unproven breast imaging technologies that are commercially available in Western Australia. These include:

- Electrical impedance
- Computerised/mechanical breast imaging (CBI)
- Thermography
- Computed Tomography Laser Mammography (CTLM)

Concerns

The promotion of unproven breast imaging technologies has raised concerns among health professionals and cancer experts, as there is little or no scientific evidence to demonstrate that these technologies reduce deaths from breast cancer.

In fact, none of these technologies are approved for use in Australia as standalone tests for breast cancer detection – they are only approved for use in conjunction with scientifically proven breast imaging techniques such as mammography.

Breast imaging technologies are commercially available because they have been approved for use by the Therapeutic Goods Administration (TGA). However, this approval only ensures that the technologies are safe in terms of immediate harm. Therapeutic Goods Administration approval does not mean that the technologies can detect breast cancer or should be used as screening tools.

Screening with mammography

Screening is an organised program in which well people are invited to be tested for signs of a disease in its early stages, or before it develops symptoms. Screening does not diagnose the disease but identifies people who need to undergo further tests to determine whether the disease is present. Regular screening mammograms have been proven to reduce the number of breast cancer deaths.

BreastScreen WA offers women free mammograms (breast x-rays) to screen women for breast cancer. Women aged 50-74 are invited to attend, and women aged 40-49 and 75+ years are also eligible to attend. BreastScreen WA is rigorously audited to ensure the safety and quality of its service. The operators offering unproven breast imaging commercially **are not** subject to any audit or quality control measures to ensure they deliver their services in a safe manner.

Information about breast screening and screening mammography is available in the 'Have a FREE screening mammogram: Helping you make an informed choice' and 'Breast cancer – How much do you know?' brochures - call 9323 6762 to order, or visit www.breastscreen.health.wa.gov.au. For more information, or to make an appointment visit www.breastscreen.health.wa.gov.au or call 13 20 50, for the cost of a local call.

Unproven breast imaging technologies currently available in Western Australia

Electrical impedance

Electrical impedance measures how fast a small electric charge travels through the breast. There is evidence to suggest that tumours conduct electricity differently from normal breast tissue due to changes in cell structure and function, and electrical impedance may be able to detect these differences. There is no research that recommends electrical impedance is as an effective standalone test for breast cancer detection or screening. Evidence shows that extensive research and development is needed before electrical impedance scanning could be used in this way because it produces too many false negative and false positive results (see Box 1 overpage).

This makes it an unreliable tool for cancer detection or screening.

Three clinics are known to currently use electrical impedance devices in Western Australia: Breast Check and Resort to Health, which use the 'MEDEX' device, and Safe Breast Imaging, which uses the 'MEM' device. Other clinics may exist.

Computerised/mechanical breast imaging (CBI)

Computerised/mechanical breast imaging (CBI) involves applying physical pressure to the breast with a hand-held probe. The probe contains special sensors that measure and record how the breast responds to the pressure. The theory is that tissues of different types within the breast have different physical properties, such as hardness, elasticity and mobility, which can be measured from the surface of the skin.

Box 1. False negative: A false negative result is where a test shows that a person does not have cancer when in fact they do. A false negative result can delay diagnosis and treatment of cancer, which may result in a poorer outcome for the patient.

False positive: A false positive result is where a test shows a person has cancer when in fact they don't. False positive results lead to unnecessary investigation and testing, which may cause a patient anxiety and harm.

Currently, there is no research that recommends this imaging technique as an effective standalone test for breast cancer detection or screening. The existing evidence indicates CBI may be a useful way to record or document a clinical breast examination, which is a physical examination of the breast done by a health professional to check for signs of breast cancer. However, the National Breast and Ovarian Cancer Centre and the Royal Australian College of General Practitioners do not recommend clinical breast examination for breast cancer screening.

The Breast Logic clinic, which uses a device called 'Sure Touch', is one clinic that uses a CBI device in Western Australia.

Thermography

Thermography devices use an infrared camera to detect 'warmer' areas on the skin surface and generate 'heat maps' of each breast. Skin overlying a breast cancer may be warmer than surrounding skin, because tumours contain fast growing cells and have increased blood flow, which can generate heat. Thermography services claim their devices can detect heat changes in the skin that may indicate a cancer is present.

There do not appear to be any studies of thermography that recommend it as an effective standalone test for breast cancer detection or screening. The existing evidence indicates breast thermography produces considerable false negative and false positive results (see Box 1).

Several clinics offer thermography in Western Australia: Lifetronics, TARA Health Centre, and Breast Check.

Computer Tomography Laser Mammography (CTLM)

Computed tomography laser mammography (CTLM) sends near infrared light into breast tissue. Near infrared light is absorbed by haemoglobins (proteins) in the blood, which act as a contrast medium. The CTLM device is claimed to detect increased blood vessel formation in tissue, which is a feature of tumours.

CTLM is a new technology that does not appear to have been clinically evaluated as a standalone test for breast cancer detection. The existing evidence reveals major limitations with the low resolution of CTLM images, and indicates CTLM requires considerably further development and evaluation.

There do not appear to be any clinics offering CTLM technology yet in Western Australia, however the Australasian distributor for CTLM is based in Perth.

Summary

It is vital that women understand that the unproven breast imaging technologies featured in this fact sheet are not proven to effectively detect or screen for breast cancer. Research does not confirm that any of the technologies are valid alternatives to mammographic screening, and clinical decisions cannot be based on the results of these unproven imaging tests. Women with a lump detected using an unproven breast imaging device will still require assessment using conventional, validated methods, such as mammography or breast ultrasound, for a definitive diagnosis.

Of the range of techniques in use for the detection of breast cancer, mammography is currently the only examination that is supported by objective and randomised clinical trials for screening and diagnosis. To book your mammogram appointment with BreastScreen WA phone 13 20 50 (cost of a local call). For more information about the BreastScreen WA program visit: www.breastscreen.health.wa.gov.au

All women should be aware of the look and feel of their breasts. If they notice any change in their breasts, such as a lump, redness, pain, puckering of the skin or nipple discharge, they should contact their doctor promptly to arrange further investigation.

For more information contact Cancer Council on 13 11 20